

## ABSTRACT

METHOD OF COMPLEX TREATMENT OF DIESEL FUEL AND  
VORTEX APPARATUS

5 The essence of the method is that diesel fuel is heated in the  
 process of periodical circulation in a closed circuit including a heat  
 exchanger and a rotor-disc apparatus of open type in centrifugal force  
 field of which processes of mechanical destruction and dispersion run  
 in environment of sucked air with oxygen saturation, simultaneously  
 10 with processes of separation and homogenization fine filtration is  
 carried out at a filtering porous partition of hydrophobic material  
 with purification fineness  $3 \div 8$  micron as well as filtration at a  
 multilayer filter-reactor at temperature  $25 \div 45^\circ\text{C}$  which comprises  
 granules of multifunctional catalyst alkylating aromatic compounds  
 and a layer of fill of powder of transitional metals or their oxides.  
 15 Then the treated fuel is stabilized by adding additives on the basis of  
 surface-active substances. At that conical trays of the rotor-disc  
 apparatus of open type are made with destruction edge in form of  
 flanging with slots and bends at the following correlation of  
 geometric parameters:

$$\begin{aligned} D &= (2,0 \div 2,5) d; \\ H &= (0,75 \div 0,85) d; \\ \alpha &= 45 \div 55^\circ \end{aligned}$$

where: D = diameter of the large (lower) base of the conical tray;

d = diameter of the small (upper) base of the conical tray;

25 H = height of the conical tray;

$\alpha$  = angle between the generator and the large (lower) base of  
 the conical tray.